

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1. (Currently Amended) A method in a data processing system for monitoring execution of instructions, the method comprising:  
determining whether an instruction ~~is associated with~~ contains an indicator, wherein the indicator identifies the instruction or a first memory location as one that is to be monitored by a performance monitor unit; and  
incrementing a counter associated with the instruction in response to detecting execution of the instruction and to a determination that the instruction is associated with the indicator, the incrementing providing a count of a number of times the instruction was executed.
2. (Original) The method of claim 1 further comprising:  
resetting the counter if the counter exceeds a threshold value.
3. (Original) The method of claim 2 further comprising:  
reading a value of the counter prior to the counter exceeding the threshold value.
4. (Currently amended) The method of claim 1, wherein the incrementing step comprises:  
incrementing the counter ~~by an instruction cache~~ in response to detecting execution of the instruction and to a determination that the instruction is associated with the indicator.
5. (Original) The method of claim 1, wherein the counter is a field in the instruction.

6. (Original) The method of claim 1, wherein the counter is located in a shadow memory.
7. (Original) The method of claim 1, wherein the indicator is the counter.
8. (Original) The method of claim 1 further comprising:  
changing the indicator to disable counting execution of the instruction upon subsequently encountering the indicator.
9. (Original) The method of claim 1, wherein the determining step is initiated when the instruction is executed.
10. (Currently Amended) A method in a data processing system for monitoring access to data, the method comprising:  
responsive to an access to a memory location, determining whether the memory location ~~is associated with~~ contains an indicator, wherein the indicator identifies the instruction or memory location as one that is to be monitored by a performance monitor unit; and  
responsive to the memory location being associated with the indicator, incrementing a counter associated with the memory location, the incrementing providing a count of a number of times the instruction was executed.
11. (Original) The method of claim 10, wherein the counter is located in a field.
12. (Original) The method of claim 11, wherein the field includes a control bit that forms the indicator.
13. (Currently Amended) A data processing system for monitoring execution of instructions, the data processing system comprising:

determining means for determining whether an instruction ~~is associated with~~ contains an indicator, wherein the indicator identifies the instruction or memory location as one that is to be monitored by a performance monitor unit; and

incrementing means for incrementing a counter associated with the instruction in response to detecting execution of the instruction and to a determination that the instruction is associated with the indicator, the incrementing providing a count of a number of times the instruction was executed.

14. (Original) The data processing system of claim 13 further comprising:  
resetting means for resetting the counter if the counter exceeds a threshold value.

15. (Original) The data processing system of claim 14 further comprising:  
reading a value of the counter prior to the counter exceeding the threshold value.

16. (Currently amended) The data processing system of claim 13, wherein the incrementing means comprises:

means for incrementing the counter ~~by an instruction cache~~ in response to detecting execution of the instruction and to a determination that the instruction is associated with the indicator.

17. (Original) The data processing system of claim 13 further comprising:  
changing means for changing the indicator to disable counting execution of the instruction upon subsequently encountering the indicator.

18. (Currently Amended) A data processing system in a data processing system for monitoring access to data, the data processing system comprising:

determining means, responsive to an access to a memory location, for determining whether the memory location ~~is associated with~~ contains an indicator, wherein the indicator identifies the instruction or memory location as one that is to be monitored by a performance monitor unit; and

incrementing means, responsive to the memory location being associated with the indicator, for incrementing a counter associated with the memory location, the incrementing providing a count of a number of times the instruction was executed.

19. (Original) The data processing system of claim 18, wherein the counter is located in a field.

20. (Original) The data processing system of claim 18, wherein the field includes a control bit that forms the indicator.

21. (Currently Amended) A computer program product in a ~~computer-readable~~ recordable-type medium for monitoring execution of instructions, the computer program product comprising:

first instructions for determining whether an instruction ~~is associated with~~ contains an indicator, wherein the indicator identifies the instruction or memory location as one that is to be monitored by a performance monitor unit; and

second instructions for incrementing a counter associated with the instruction in response to detecting execution of the instruction and to a determination that the instruction is associated with the indicator, for providing a count of a number of times the instruction was executed.

22. (Original) The computer program product of claim 21 further comprising:  
third instructions for resetting the counter if the counter exceeds a threshold value.

23. (Original) The computer program product of claim 22 further comprising:  
fourth instruction for reading a value of the counter prior to the counter exceeding the threshold value.

24. (Currently amended) The computer program product of claim 21, wherein the second instructions comprises:

sub-instructions for incrementing the counter ~~by an instruction cache~~ in response to detecting execution of the instruction and to a determination that the instruction is associated with the indicator.

25. (Currently Amended) A computer program product in a ~~computer-readable~~ recordable-type medium for monitoring access to data, the computer program product comprising:

first instructions for determining whether the memory location ~~is associated with~~ contains an indicator, responsive to an access to a memory location, wherein the indicator identifies the instruction or memory location as one that is to be monitored by a performance monitor unit; and

second instructions for incrementing a counter associated with the memory location, responsive to the memory location being associated with the indicator for providing a count of a number of times the memory location is accessed.